


1914

TWO NEW FOSSIL DOGS OF THE GENUS CYNARCTUS FROM NEBRASKA

Erwin H. Barbour
Nebraska Geological Survey

Harold J. Cook
Nebraska Geological Survey

Follow this and additional works at: <http://digitalcommons.unl.edu/conservationsurvey>

 Part of the [Geology Commons](#), [Geomorphology Commons](#), [Hydrology Commons](#), [Paleontology Commons](#), [Sedimentology Commons](#), [Soil Science Commons](#), and the [Stratigraphy Commons](#)

Barbour, Erwin H. and Cook, Harold J., "TWO NEW FOSSIL DOGS OF THE GENUS CYNARCTUS FROM NEBRASKA" (1914). *Conservation and Survey Division*. 651.
<http://digitalcommons.unl.edu/conservationsurvey/651>

This Article is brought to you for free and open access by the Natural Resources, School of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Conservation and Survey Division by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

36a

NEBRASKA GEOLOGICAL SURVEY

ERWIN HINCKLEY BARBOUR, State Geologist

VOLUME 4

PART 15

TWO NEW FOSSIL DOGS OF THE GENUS
CYNARCTUS FROM NEBRASKA

BY
ERWIN H. BARBOUR
AND
HAROLD J. COOK

GEOLOGICAL COLLECTIONS OF HON. CHARLES H. MORRILL



200 B

TWO NEW FOSSIL DOGS OF THE GENUS CYNARCTUS FROM NEBRASKA

BY ERWIN H. BARBOUR AND HAROLD J. COOK

The genus *Cynarctus* was founded by Dr. W. D. Matthew on a nearly complete pair of lower jaws from the Pawnee Creek Beds (Middle Miocene) of Colorado, found in 1901. Since that time no new material pertaining to this genus has been reported. Dr. Matthew referred the genus to the subfamily Amphicyoninae, and to a position intermediate between the primitive bear *Ursavus*, and the Canidae, with primitive characters retained from its Oligocene ancestors.

The genus *Cynarctus* evidently is representative of a line of Canidae, which branched off from the root stock not later than the early Oligocene, and more closely parallels the typical contemporary dogs than the Ursidae, to which they show affinities. From the evidence presented by the material herein described, it would appear that the resemblance in the later forms of *Cynarctus* to the primitive bears may be, to a large degree, analogous development, rather than true homology.

CYNARCTUS CRUCIDENS, SP. NOV.

This species is represented by a right lower jaw, with nearly complete dentition (No. 2.2.11.13, Collection of Hon. Charles H. Morrill, The Nebraska State Museum). It was collected for the Nebraska Geological Survey in Williams Canyon, Brown County, during the summer of 1913, by Mr. A. C. Whitford, a Fellow in the Department of Geology, The University of Nebraska.

It was found in beds which are about equivalent to the Snake Creek beds (Lower Pliocene) of Sioux County, Nebraska.

This species has the most specialized dentition representing the genus *Cynarctus* which has so far been found. The premolars are more reduced than in the type of the genus (*C. saxatilis*) from the Middle Miocene of Colorado. The jaw is relatively longer and more slender, and M_3 is relatively larger. The specimen is about one-third smaller than the type of *C. saxatilis*, the teeth are narrower, and the canine smaller. The cusps of the premolars are all lower and less pronounced in the latter form. The heel of P_4 is expanded until it gives the tooth almost the appearance of a carnassial with reduced paraconid.

The posterior accessory cusp is not located on the central longitudinal axis of the tooth, as is commonly the case in the Canidae, but it is shifted outwardly. Its position parallels that of the accessory cusp which is developed on the outer side of the protoconid of M_1 opposite the metaconid, which is so characteristic of *Cynarctus*. The position of the cusp on P_4 reminds one of the metaconid, and adds to the general resemblance of this tooth to the sectorial. If this tooth were found alone, and not carefully oriented, it might easily be mistaken for a first lower molar.

The trigonid of the sectorial is reduced in this species, and the heel is broadly expanded, just about equaling the trigonid in size. M_2 is relatively longer and narrower, and the heel is more constricted. M_3 is larger in the present species, and is broadly expanded anteriorly. See plate 1, a, b, c, d.

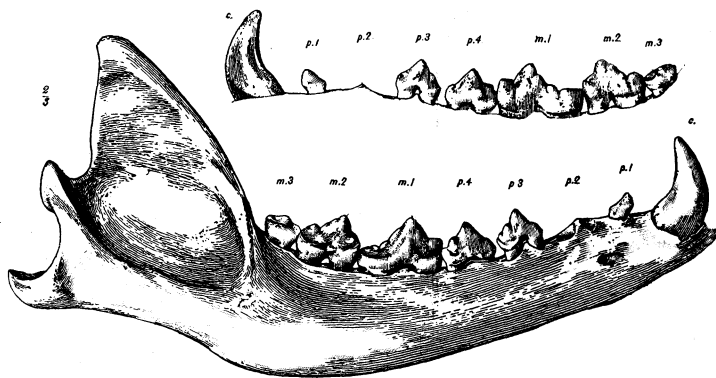
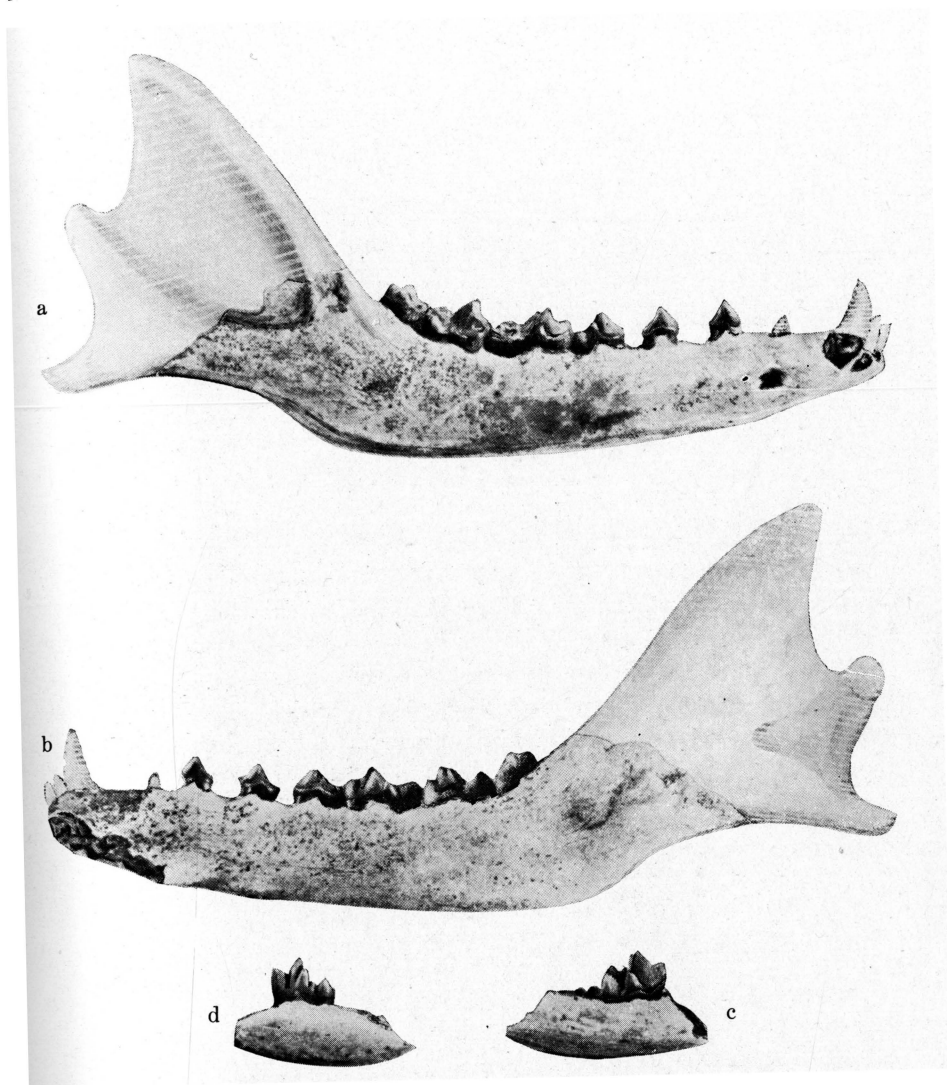


Fig. 1.—*Cynarctus saxatilis*. x 2/3.

CYNARCTUS ACRIDENS, SP. NOV.

This is the smallest and most primitive species so far discovered. It is based on part of a lower right jaw, (No. HC144, collection of the junior writer) with the carnassial tooth, and the alveoli of P_4 and M_2 . M_2 , M_3 , and P_4 were present when found, but the specimen was unfortunately damaged later and these teeth lost, with the exception of M_1 . The specimen was found by the junior writer in the Upper Harrison beds (Lower Miocene), about four miles northeast of Agate, Nebraska.

The jaw is exceedingly slender, being only 7 mm. deep, and it is proportionately narrow. The cusps are exceptionally high in propor-



TWO NEW SPECIES OF CYNARCTUS.

- a. *Cynarctus crucidens*. Outer surface. Natural size.
- b. The same. Inner surface.
- c, and d. *Cynarctus acridens*. Outer and inner surface. Natural size.

tion to their size, and are very sharp. The cusps are arranged as in *C. saxatilis* and *C. crucidens*, but the proportions are different. The talonid is shorter in proportion to the trigonid than in either of the other species, the paraconid is relatively better developed, and the proportions are more typical of the Canidae than in either of the other species. The exterior accessory cusp on the outside of the protoconid is relatively more strongly developed than in either of the other forms described. With this exception, it is more primitive than either of the others, and may well stand in a direct ancestral line to them. The other accessory cusp which is typical of the genus, and is located between the entoconid and the metaconid, is not large, but is clearly defined. The entoconid and the hypoconid are nearly equal in size. M_2 is very similar to that in the other species, but somewhat smaller proportionally. M_3 is relatively smaller and P_4 is proportionally larger.

While the type is not as complete as is desirable, extensive exploration has failed to reveal other evidences of this rare genus, so this type seems worth recording.

The University of Nebraska
Lincoln, May 11, 1914.

Distributed November 25, 1914